

## TENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

To:

F. F. GORMAN & CO.  
15 Clanwilliam Square  
Dublin 2  
IRLANDE

Date of mailing (day/month/year) 27 October 2001 (27.10.01)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference PE1122	
International application No. PCT/IE00/00091	International filing date (day/month/year) 26 July 2000 (26.07.00)

1. The following indications appeared on record concerning:	
<input type="checkbox"/> the applicant	<input type="checkbox"/> the inventor <input checked="" type="checkbox"/> the agent <input type="checkbox"/> the common representative
Name and Address F. F. GORMAN & CO. 54 Merrion Square Dublin 2 Ireland	State of Nationality
	State of Residence
	Telephone No. 353 1 6760363
	Facsimile No. 353 1 6761550
Teleprinter No.	
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:	
<input type="checkbox"/> the person	<input type="checkbox"/> the name <input checked="" type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence
Name and Address F. F. GORMAN & CO. 15 Clanwilliam Square Dublin 2 Ireland	State of Nationality
	State of Residence
	Telephone No. 353 1 6760363
	Facsimile No. 353 1 6761550
Teleprinter No.	
3. Further observations, if necessary:	
4. A copy of this notification has been sent to:	
<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned
<input type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer R. Raissi
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
US Department of Commerce  
United States Patent and Trademark  
Office, PCT  
2011 South Clark Place Room  
CP2/5C24  
Arlington, VA 22202  
ETATS-UNIS D'AMERIQUE  
in its capacity as elected Office

<b>Date of mailing</b> (day/month/year) 28 March 2001 (28.03.01)	
<b>International application No.</b> PCT/IE00/00091	<b>Applicant's or agent's file reference</b> PE1122
<b>International filing date</b> (day/month/year) 26 July 2000 (26.07.00)	<b>Priority date</b> (day/month/year) 26 July 1999 (26.07.99)
<b>Applicant</b> OGLESBY, John, Paul	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
30 January 2001 (30.01.01)

☐ in a notice effecting later election filed with the International Bureau on:


2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<b>The International Bureau of WIPO</b> 34, chemin des Colombettes 1211 Geneva 20, Switzerland	<b>Authorized officer</b> Pascal Piriou
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PE1122		<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IE00/00091	International filing date (day/month/year) 26/07/2000	Priority date (day/month/year) 26/07/1999	
International Patent Classification (IPC) or national classification and IPC B05C17/005			
Applicant OGLESBY & BUTLER RESEARCH & DEVELOPMENT LTD et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 5 sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the report</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input checked="" type="checkbox"/> Certain defects in the international application</li> <li>VIII <input type="checkbox"/> Certain observations on the international application</li> </ul>			
Date of submission of the demand 30/01/2001		Date of completion of this report 19.09.2001	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized officer  Welsch, H  Telephone No. +49 89 2399 2907	



# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IE00/00091

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

### Description, pages:

1-14 as originally filed

### Claims, No.:

1-27 as received on 07/09/2001 with letter of 05/09/2001

### Drawings, sheets:

1/6-6/6 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IE00/00091

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Yes:	Claims	1-27
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-27
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-27
	No:	Claims	

2. Citations and explanations  
**see separate sheet**

## VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

- 1.1 The application concerns a gas powered heating device for a glue gun for melting a glue stick.

Claim 1 defines the necessary features of such a heating device which distinguishes itself from the known heating devices in that heat exchange means having a plurality of heat exchange fins and forming a circuitous passageway for the exhaust gases are provided. An important advantage of this proposal is that the exhaust gases exit from the exhaust gas outlet at a relatively low temperature which means that there is little danger of damage to a user of the device and that the device operates particularly efficiently.

Since the revealed state of the art neither discloses the device according to claim 1 nor renders it obvious the subject-matter of the claim fulfils the requirements of Article 33(2) - novelty - and (3) - inventive step - of the PCT.

- 1.2 Claims 2 to 26 are dependent on claim 1 and relate to particular embodiments of the subject-matter of claim 1. Accordingly, the subject-matter of these claims is also novel and inventive.
2. Claim 27 which concerns the use of the heating device claimed in the preceding claims in a glue gun also meets the requirements of the PCT.

**Re Item VII**

**Certain defects in the international application**

1. The description should be adapted to the claims and documents EP 0 235 055 A and EP 0 123 259 A should be referred to in the description (Rule 5.1 (a) (ii) PCT).

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>PE1122</b>	<b>FOR FURTHER ACTION</b>		see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. <b>PCT/IE 00/ 00091</b>	International filing date (day/month/year) <b>26/07/2000</b>	(Earliest) Priority Date (day/month/year) <b>26/07/1999</b>	
Applicant <b>OGLESBY &amp; BUTLER RESEARCH &amp; DEVELOPMENT LIMITED</b>			

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of Invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☒ because this figure better characterizes the invention.

1

☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/IE 00/00091

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 B05C17/005

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B05C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 235 055 A (APPLIC GAZ SA) 2 September 1987 (1987-09-02) page 5, line 31 -page 6, line 31; figures ---	1,2, 11-27,31
X	EP 0 123 259 A (BEECHAM GROUP PLC) 31 October 1984 (1984-10-31) page 6; figures ---	1,2, 11-27,31
A	GB 2 263 243 A (WANG CHIEN LI CHU) 21 July 1993 (1993-07-21) page 3, line 5 - line 7; figures ---	3
A	US 5 881 924 A (BOKROS LES) 16 March 1999 (1999-03-16) column 8, line 26 - line 52; figures -----	3

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

1 November 2000

Date of mailing of the international search report

09/11/2000

Name and mailing address of the ISA

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Authorized officer

Brévier, F



# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

EP/IE 00/00091

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0235055	A	02-09-1987	FR 2594358 A	21-08-1987
			JP 62201673 A	05-09-1987
			US 4755073 A	05-07-1988
EP 0123259	A	31-10-1984	NONE	
GB 2263243	A	21-07-1993	NONE	
US 5881924	A	16-03-1999	US 6041972 A	28-03-2000

REPLACED BY  
ART 34 AMDT

15

Claims

1. A heating device comprising a main housing (4) defining a combustion chamber (6) within which fuel gas is converted to heat for heating the main housing (4), an exhaust gas port (15) from the combustion chamber (6) for exhausting burnt gases therefrom, and a working body member (5) of heat conductive material in heat conducting engagement with the main housing (4) for receiving heat therefrom, characterised in that a heat exchange means (45,46) communicating with the exhaust gas port (15) for receiving exhaust gases therefrom is located adjacent the working body member (5) for transferring heat from the exhaust gases to the working body member (5) for reducing the temperature at which the exhaust gases exit from the heating device (3).
2. A heating device as claimed in Claim 1 characterised in that the heat exchange means is in heat conducting engagement with the working body member.
3. A heating device as claimed in Claim 1 or 2 characterised in that the heat exchange means (45,46) comprises a plurality of spaced apart heat exchange fins (45,46) extending from the working body member (5).
4. A heating device as claimed in Claim 3 characterised in that the heat exchange fins (45,46) define an exhaust gas passageway (33), the exhaust gas passageway (33) extending between the exhaust gas port (15) and an exhaust gas outlet (34) for receiving and conducting the exhaust gases from the exhaust gas port (15) past the heat exchange fins (45,46) to the exhaust gas outlet (34).
5. A heating device as claimed in Claim 4 characterised in that the heat exchange fins (45,46) define a circuitous exhaust gas passageway (33).
6. A heating device as claimed in Claim 5 characterised in that the heat exchange fins (45,46) extend from the working body member (5) in a staggered formation for forming the circuitous exhaust gas passageway (33).

7. A heating device as claimed in any of Claims 4 to 6 characterised in that the heat exchange fins (45,46) are parallel or inclined to each other.

8. A heating device as claimed in any of Claims 4 to 7 characterised in that a  
5 cover (30) is provided around the working body member (5) adjacent the heat exchange fins (45,46) for defining with the working body member (5) and the heat exchange fins (45,46), the exhaust gas passageway (33).

9. A heating device as claimed in any of Claims 4 to 8 characterised in that the  
10 heat exchange fins (45,46) extend on respective opposite sides of the working body member (5) for defining a pair of passageways (33) extending on both sides of the working body member (5).

10. A heating device as claimed in Claim 9 characterised in that the respective  
15 passageways (33) merge adjacent the exhaust gas port (15) and adjacent the exhaust gas outlet (34).

11. A heating device as claimed in any preceding claim characterised in that the  
main housing (4) is an elongated main housing defining an elongated combustion  
20 chamber (6) extending from an upstream end (7) to a downstream end (8), the exhaust gas port (15) being located adjacent the downstream end (8), the heat exchange means (45,46) being located on the working body member (5) adjacent the downstream end (8) of the main housing (4).

25 12. A heating device as claimed in Claim 11 characterised in that the working body member (5) extends longitudinally along the main housing (4) from the upstream end (7) to the downstream end (8) thereof.

13. A heating device as claimed in Claim 12 characterised in that a portion (25)  
30 of the working body member (5) extends in a downstream direction beyond the downstream end (8) of the main housing (4), and the heat exchange means (45,46) is located adjacent the portion (25) of the working body member (5) extending

downstream beyond the working body member (5).

14. A heating device as claimed in any preceding claim characterised in that the working body member (5) defines a heating chamber (20) for receiving and melting hot melt glue therein, and a dispensing nozzle (25) extends from the working body member (5) communicating with the heating chamber (20) for receiving and dispensing melted glue therefrom.

15. A heating device as claimed in Claim 14 characterised in that the heating chamber (20) is an elongated heating chamber (20) extending between an upstream end (21) and a downstream end (22), the dispensing nozzle (25) extending in a generally downstream direction from the downstream end (22) of the working body member (5).

16. A heating device as claimed in Claim 14 or 15 characterised in that the heat exchange means (45,46) is located adjacent the dispensing nozzle (25).

17. A heating device as claimed in Claim 16 characterised in that the heat exchange means (45,46) extends around the dispensing nozzle (25) in a direction transversely of the upstream/downstream direction of the heating chamber (20).

18. A heating device as claimed in any of Claims 14 to 17 characterised in that the dispensing nozzle (25) extends axially from the working body member (5) relative to the heating chamber (20).

19. A heating device as claimed in Claim 18 characterised in that the dispensing nozzle (25) extends co-axially with the heating chamber (20) from the working body member (5).

20. A heating device as claimed in any of Claims 14 to 19 characterised in that a glue receiving inlet (23) is provided at the upstream end (21) of the heating chamber (20) for receiving glue into the heating chamber (20) in an elongated stick form.

21. A heating device as claimed in Claim 20 characterised in that the glue receiving inlet (23) receives the glue stick co-axially with the heating chamber (20).

5 22. A heating device as claimed in any of Claims 14 to 21 characterised in that the working body member (5) is located relative to the main housing (4) so that the heating chamber (20) and the combustion chamber (6) extend parallel to each other.

23. A heating device as claimed in any preceding claim characterised in that a  
10 fuel gas inlet (11) is located at the upstream end (7) of the combustion chamber (6) for receiving fuel gas for converting to heat in the combustion chamber (6).

24. A heating device as claimed in any preceding claim characterised in that a  
15 gas catalytic combustion element (10) is located in the combustion chamber (6) for converting fuel gas to heat.

25. A heating device as claimed in any preceding claim characterised in that the heat exchange means (45,46) is adapted for reducing the temperature of the exhaust gases exiting the exhaust gas outlet (34) to a temperature approximately  
20 similar to the temperature of the working body member.

26. A heating device as claimed in any preceding claim characterised in that the heat exchange means (45,46) is adapted for reducing the temperature of the exhaust gases exiting the exhaust gas outlet (34) to a temperature approaching the  
25 temperature of the working body member.

27. A heating device as claimed in any preceding claim characterised in that the heat exchange means (45,46) is adapted for reducing the temperature of the exhaust gases exiting the exhaust gas outlet (34) to a temperature just slightly above  
30 the temperature of the working body member adjacent the heat exchange means.

28. A heating device as claimed in any preceding claim characterised in that the

heat exchange means (45,46) is adapted for reducing the temperature of the exhaust gases exiting the exhaust gas outlet (34) to a temperature not greater than 50°C above the temperature of the working body member adjacent the heat exchange means.

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29. A heating device as claimed in any preceding claim characterised in that the heat exchange means (45,46) is adapted for reducing the temperature of the exhaust gases exiting the exhaust gas outlet (34) to a temperature not greater than 15°C above the temperature of the working body member adjacent the heat exchange means.

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30. A heating device as claimed in any preceding claim characterised in that the heat exchange means (45,46) is adapted for reducing the temperature of the exhaust gases exiting the exhaust gas outlet (34) to a temperature not greater than 5°C above the temperature of the working body member adjacent the heat exchange means.

15

31. A glue gun characterised in that the glue gun (1) comprises the heating device (3) claimed in any preceding claim.

# INTERNATIONAL SEARCH REPORT

International Application No.

PCT/IE 00/00091

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 B05C17/005

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 B05C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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X	EP 0 235 055 A (APPLIC GAZ SA) 2 September 1987 (1987-09-02) page 5, line 31 -page 6, line 31; figures ----	1,2, 11-27,31
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- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

1 November 2000

Date of mailing of the international search report

09/11/2000

Name and mailing address of the ISA  
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Fax: (+31-70) 340-3016

Authorized officer

Brévier, F

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IE 00/00091

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0235055	A	02-09-1987	FR 2594358 A	21-08-1987
			JP 62201673 A	05-09-1987
			US 4755073 A	05-07-1988
EP 0123259	A	31-10-1984	NONE	
GB 2263243	A	21-07-1993	NONE	
US 5881924	A	16-03-1999	US 6041972 A	28-03-2000